

## A study of future lunar exploration system for sample return

IWATA, Takahiro<sup>1\*</sup>, KATO, Manabu<sup>1</sup>, TANAKA, Satoshi<sup>1</sup>, OKADA, Tatsuaki<sup>1</sup>

<sup>1</sup>ISAS/JAXA

We report results of the design for the sample return system as a future lunar exploration which is planned to be launched after SELENE-2. Candidate missions for SELENE-3 are the sample return from the lunar surface, observations for inner structure, and lunar environment utilizations for astronomy and scientific experiment, therefore, the system is requested to realize these scientific missions. We studied the components of spacecraft, mass and power budgets, and mission profile and the sequence of events. We also investigated the bus equipments for the takeoff, rendezvous with an orbiter, and the navigation and control system to return to the earth. We displayed the restriction of systems under the assumption of landing sites; low latitude areas on the lunar near side, lunar far side, and polar areas.

Keywords: Moon, SELENE-3, sample return